

REMARKS

In accordance with the foregoing, claim 32 has been amended, and new claims 35-38 have been added. Claims 12, 14-16, 22, and 24-38 are pending, with claims 12 and 22 being independent. No new matter is presented in this Amendment.

Entry of Amendment After Final Rejection of September 5, 2007

Please enter the Amendment After Final Rejection of September 5, 2007.

Request for Interview Prior to Issuance of Next Office Action

In the event the Examiner is inclined to repeat any of the rejections of claims 12, 14-16, 22, and 24-34 over the prior art or reject any of new claims 35-38 over any of the prior art relied on by the Examiner in the rejections of claims 12, 14-16, 22, and 24-34 over the prior art in light of the arguments set forth below, it is respectfully requested that the Examiner call the undersigned attorney to schedule a personal interview prior to issuing the next Office Action.

Applicants' Statement of Substance of Interview

The Interview Summary mailed October 15, 2007, for the telephone interview between SPE Sue A. Purvis, the Examiner's supervisor, and the undersigned attorney is acknowledged. The applicants' statement of the substance of the interview required by MPEP 713.04 is as follows.

On October 2, 2007, in response to the applicants' arguments on pages 6 and 7 of the Amendment After Final Rejection of September 5, 2007, pointing out that the finality of the Office Action of June 8, 2007, is premature under MPEP 706.07(a) because the Office Action includes new grounds of rejection based on Teramoto of independent claims 12 and 22 that were not amended in the Amendment of February 26, 2007, the SPE told the attorney that, after consulting with one of the Training Quality Assurance Specialists (TQAS) in Technology Center 2800, the SPE had decided to withdraw the new grounds of rejection of independent claims 12 and 22 based on Teramoto to avoid having to withdraw the finality of the Office Action. However, the SPE said that the rejections of new dependent claims 29-34 based on the Teramoto

reference would be maintained. The attorney asked the SPE if this meant that the SPE now considers independent claims 12 and 22 to be patentable over Teramoto. The SPE did not answer this question, but merely said that independent claims 12 and 22 remain rejected on other grounds. The SPE states as follows in the Interview Summary of October 15, 2007:

The attorney [sic] noted that claims 12 and 22 were rejected under a new grounds of rejection (Teramoto in view of Yamazaki) which was not necessitated by amendment in so far as these claims were not amended. As such the rejection of claims 12 and 22 under this new grounds of rejection is withdrawn. It is note that the other rejections for claims 12 and 22 over Yamazaki stand. Furthermore, claims 29-34 remain properly finally rejected under Teramoto in view of Yamazaki. As such the final rejection is proper and maintained.

Errors in the Office Action Summary

Items 4 and 6 in the Office Action Summary of the Final Office Action of June 8, 2007, indicate that claims 12-16, 22, and 24-34 are pending and are rejected. However, claim 13 was canceled in the Amendment of October 13, 2004, such that it is actually claims 12, 14-16, 22, and 24-34 that were pending when the Final Office Action of June 8, 2007, was issued and were rejected in the Final Office Action of June 8, 2007. Item 7 in the Advisory Action of September 26, 2007, correctly indicates that 12, 14-16, 22, and 24-34 are rejected.

The Examiner's Response to the Applicants' Arguments in the Advisory Action of September 26, 2007, is Completely Inadequate

The arguments presented below with respect to the rejections of claims 12, 14-16, 22, and 24-34 over the prior art were also presented in the Amendment After Final Rejection of September 5, 2007. The Examiner's entire response to these arguments in the Advisory Action of September 26, 2007, is as follows:

Regarding . . . the art rejection, Applicants are referred to pages 2-4 . . . of previous action [the Final Office Action of June 8, 2007].

It is submitted that this response is completely inadequate because the applicants' arguments in the Amendment After Final Rejection of September 5, 2007, explained why the

Examiner's position set forth on pages 2-4 of the Final Office Action of June 8, 2007, is not correct, and MPEP 707.07(f) required the Examiner to take note of these arguments and answer the substance of them in the Advisory Action of September 26, 2007.

In any event, it is respectfully requested that the Examiner take note of the arguments below and answer the substance of them in the next Office Action if the Examiner does not allow the application.

Claims Rejections Under 35 USC 102

Claims 12, 15, 16, 26, and 28 and 22, 24, and 27 (i.e., claims 12, 15, 16, 22, 24, and 26-28) have been rejected under 35 USC 102(e) as being anticipated by Yamazaki et al. (Yamazaki '190) (U.S. Patent Application Publication No. 2004/0041190). This rejection is respectfully traversed.

It is submitted that FIG. 6E of Yamazaki '190 does not disclose "source and drain electrodes which respectively contact said high-density source and drain regions without contact holes" as recited in claims 12 and 22 as alleged by the Examiner. The Examiner states that FIG. 6E of Yamazaki '190 discloses "source and drain electrodes 614/615 which respectively contact said high density source and drain regions without contact holes -- note that contact holes which might have been formed previously do not exist in the final structure as they have been filled with electrode materials." However, the Examiner's interpretation of the term "contact hole" is contrary to the accepted meaning of this term in the art, which is a hole formed through an insulating layer to enable a source or drain electrode to contact a source or drain region that is covered by the insulating layer by filling the contact hole with electrode material. Furthermore, Yamazaki '190 itself calls the holes in FIG. 6E through which source and drain electrodes 614 and 615 contact source and drain regions 609 and 610 shown in FIG. 6C "contact holes." See FIG. 5B and paragraph [0075], lines 1-3, of Yamazaki '190. The Examiner's interpretation of the term "contact hole" improperly ignores the fact that in FIG. 6E of Yamazaki '190, source and drain electrodes 614 and 615 contact the source and drain regions 609 shown in FIG. 6C through the contact holes that are clearly shown in FIG. 6E.

The above arguments were also presented on page 6 of the Amendment of February 26, 2007. In response to these arguments, the Examiner states as follows on page 3 of the Final Office Action of June 8, 2007:

In response to applicant's arguments that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the absence of contact hole which is a hole formed through an insulating layer to enable a source or drain to contact a source or drain region that is covered by the insulating layer by filling the contact hole with electrode material.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

However, the Examiner has misunderstood the point of the applicants' arguments, which is that the Examiner's interpretation of the term "contact hole" in claims 12 and 22 is contrary to the accepted meaning of this term in the art. MPEP 2111 requires the Examiner to give claims their broadest reasonable interpretation, but also states on MPEP page 2100-38 that "[t]he broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach" (emphasis added). In stating that the accepted meaning of the term "contact hole" in the art is a hole formed through an insulating layer to enable a source or drain electrode to contact a source or drain region that is covered by the insulating layer by filling the contact hole with electrode material, the applicants were merely explaining how one of ordinary skill in the art would interpret the term "contact hole" in claims 12 and 22, which is contrary to the interpretation that the Examiner has given to this term.

Paragraph [0075], lines 1-3, of Yamazaki '190 referred to in the above arguments states as follows:

Thereafter, contact holes are formed and then source electrodes 342-344 and drain electrodes 345 and 346 are formed (see FIG. 5B).

FIG. 5B of Yamazaki '190 referred to in the above passage and FIG. 6E of Yamazaki '190 apparently relied on by the Examiner in the rejection are shown below with one contact hole in each figure labeled.

FIG. 5B

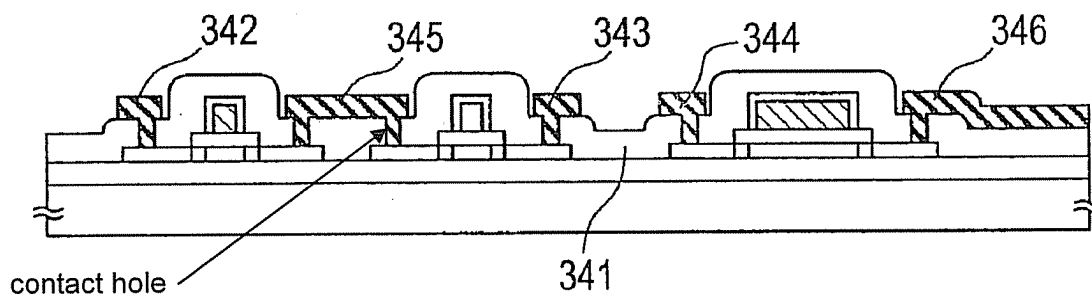
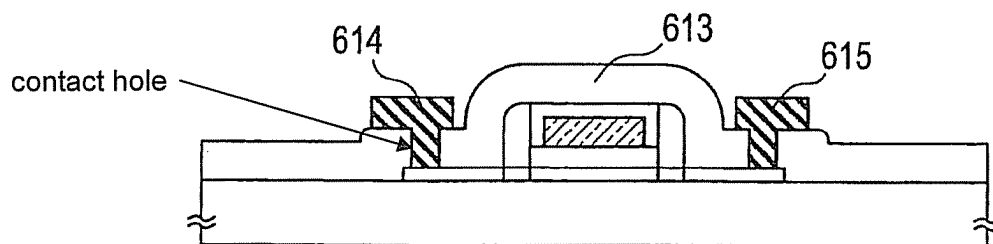


FIG. 6E



It is submitted that the fact that the contact holes are filled with an electrode material in FIGS. 5B and 6E does not change the fact that the contact holes still exist, and that one of ordinary skill in the art would understand that the contact holes still exist. If the contact holes did not exist in FIGS. 5B and 6E, it would not be possible for the electrodes 342-346, 614, and 615 to contact the source and drain regions.

Accordingly, for at least the foregoing reasons, it is submitted that claims 12, 15, 16, 22, 24, and 26-28 (i.e., claims 12 and 22 discussed above and claims 15, 16, 24, and 26-28 depending directly or indirectly from claims 12 and 22) are patentable over Yamazaki '190, and it is respectfully requested that the rejection of claims 12, 15, 16, 22, 24, and 26-28 under 35 USC 102(e) as being anticipated by Yamazaki '190 be withdrawn.

Claim Rejections Under 35 USC 103

Rejection 1

Claims 12 and 14 have been rejected under 35 USC 103(a) as being unpatentable over Zhang (U.S. Patent Application Publication No. 2002/0105033) in view of Yamazaki et. al. (Yamazaki '288) (U.S. Patent No. 5,568,288). This rejection is respectfully traversed.

The Examiner relies on the partial transistor structure shown in FIGS. 10A-10F of Zhang to show all of the features of independent claim 12 except "source and drain electrodes which respectively contact said high-density source and drain regions without contact holes." However, the Examiner considers FIGS. 21(A), 21(B), 22(F), and 22(G) of Yamazaki '288 to disclose "source and drain electrodes which respectively contact said high-density source and drain regions without contact holes" as recited in claim 12, and is of the opinion that "one having ordinary skill in the art at the time the invention was made would be motivated to modify Zhang's device by incorporating the teachings of Yamazaki so as to complete the thin film transistor as taught by Yamazaki '288."

Thus, the motivation identified by the Examiner appears to be based on the Examiner's understanding that Zhang does not disclose how to connect electrodes to the source and drain regions 124 shown in FIG. 10F of Zhang. However, it is submitted that Zhang does in fact disclose how to do this in FIGS. 6A-6D of Zhang using contact holes CH as described in paragraph [0103], lines 3-5, of Zhang. Accordingly, it is submitted that there would have been no reason for one of ordinary skill in the art to look to Yamazaki '288 for how to connect electrodes to the source and drain regions 124 shown in FIG. 10F of Zhang, such that the combination of Zhang and Yamazaki '288 proposed by the Examiner is based solely on an improper hindsight reconstruction of the applicants' invention arrived at by reading the applicants' disclosure.

The above arguments were also presented on pages 7 and 8 of the Amendment of February 26, 2007. In response to these arguments, the Examiner states as follows on page 4 of the Final Office Action of June 8, 2007:

In response, it is pointed out that the rejection is not based on the Examiner's understanding that Zhang does not disclose how to connect electrodes to the source and drain regions 124 shown in fig. 10f of Zhang, rather it is based on the Examiner's understanding that figs. 10A-10F illustrate processes of manufacturing of TFTs according to an embodiment while figs. 6A-

6D show a structure of a TFT forming a pixel in an LCD device according to another embodiment. Therefore, the embodiment as detailed in figs. 10A-1F [*sic*: 10A-10F) fails to disclose how to connect electrodes to the source and drain regions and one of ordinary skill in the art would be motivated to modify Zhang's device by incorporating electrodes connected to source and drain regions such as those taught by Yamazaki '288.

However, it is submitted that the Examiner is impermissibly relying on only a portion of Zhang, rather than considering Zhang as a whole, in order to be able to rely on Yamazaki '288 to provide the "source and drain electrodes which respectively contact said high-density source and drain regions without contact holes" recited in claim 12. FIGS. 4A-4C of Zhang show a liquid crystal display device that includes TFTs. FIGS. 5A-5G of Zhang are cross-sectional views illustrating a process of manufacturing the TFTs shown in FIG. 4A of Zhang. FIGS. 6A-6D of Zhang are plan views showing the structure of the TFT which forms a pixel in the liquid crystal display device of FIGS. 4A-4C of Zhang. Paragraph [0101], lines 9-13, of Zhang states as follows (emphasis added):

FIGS. 6A to 6D show plan structures of pixel unit including the TFT which can be manufactured by the manufacturing process described with reference to FIGS. 5A to 5G or a modified manufacturing process thereof.

Here, it is submitted that FIGS. 10A-10F of Zhang disclose such a modified process of manufacturing a TFT, particularly in light of paragraph [0132] of Zhang, which states that "FIGS. 10A to 10F. show process of manufacturing a TFT according to still further embodiment of the present invention."

In light of this, it is submitted that one of ordinary skill in the art would connect electrodes to the source and drain regions 124 shown in FIG. 10F of Zhang using contact holes CH as shown in FIGS. 6A-6D of Zhang and as described in paragraph [0103], lines 3-5, of Zhang. Accordingly, it is submitted that there would have been no reason for one of ordinary skill in the art to look to Yamazaki '288 for how to connect electrodes to the source and drain regions 124 shown in FIG. 10F of Zhang, such that the combination of Zhang and Yamazaki '288 proposed by the Examiner is based solely on an improper hindsight reconstruction of the applicants' invention arrived at by reading the applicants' disclosure.

Accordingly, for at least the foregoing reasons, it is submitted that claims 12 and 14 (i.e., claim 12 discussed above and claim 14 depending from claim 12) are patentable over Zhang

and Yamazaki '288, and it is respectfully requested that the rejection of claims 12 and 14 under 35 USC 103(a) as being unpatentable over Zhang in view of Yamazaki '288 be withdrawn.

Rejection 2

Claim 25 has been rejected under 35 USC 103(a) as being unpatentable over Yamazaki (presumably Yamazaki '190) in view of Yamazaki et al. (Yamazaki '502) (U.S. Patent Application Publication No. 2003/0207502). This rejection is respectfully traversed.

As recognized by the Examiner, Yamazaki '190 does not disclose "an organic electroluminescence (EL) layer and a cathode electrode sequentially formed on a first predetermined area of said pixel electrode and on a second predetermined area of said planarization layer" as recited in dependent claim 25. However, the Examiner considers EL layer 4029 and cathode 4030 described in "par. 0343" (presumably meant to be paragraph [0334]) of Yamazaki '502 and shown in FIG. 25B of Yamazaki '502 to correspond to these features of claim 25, and is of the opinion that it would have been obvious to incorporate these features into the device disclosed by Yamazaki '190 (presumably in FIG. 10 of Yamazaki '190) "so as to realize a high efficiency integrated device."

However, the stated purpose of Yamazaki '190 is to provide a projection TV using a reflection-type liquid crystal device or a transmission-type liquid crystal device as described, for example, in paragraphs [0002], [0007], [0026], [0027], [0035], [0078], [0080], [0167], [0168], [0170], [0205], [0206], [0216], [0224], and [0242] of Yamazaki '190. Accordingly, it is submitted that replacing the liquid crystal layer 1005 in FIG. 10 of Yamazaki '190 with electroluminescent EL layer 4029 and cathode 4030 in FIG. 25B of Yamazaki '502 as apparently proposed by the Examiner would render the device of Yamazaki '190 unsuitable for its intended purpose of providing a projection TV using a reflection-type liquid crystal device or a transmission-type liquid crystal device, and would also change the principle of operation of the device of Yamazaki '190, such that there is no suggestion or motivation for one of ordinary skill in the art to combine Yamazaki '190 and Yamazaki '502 in the manner proposed by the Examiner pursuant to MPEP 2143.01(V) and (VI) (see MPEP pages 2100-129 and 2100-130).

The above arguments were also presented on page 9 of the Amendment of February 26, 2007, but the Examiner did not take note of these arguments and answer the

substance of them in the Office Action of June 8, 2007, as required by MPEP 707.07(f).

Rather, the Examiner merely repeated the rejection.

Accordingly, for at least the foregoing reasons, it is respectfully requested that the rejection of claim 25 under 35 USC 103(a) as being unpatentable over Yamazaki '190 in view of Yamazaki '502 be withdrawn.

Rejection 3

Claims 12 and 29-31 and 22 and 32-34 (i.e., claims 12, 22, and 29-34) have been rejected under 35 USC 103(a) as being unpatentable over Teramoto et al. (Teramoto) (JP 7-78782) and its U.S. counterpart Takemura et al. (Takemura) (U.S. Patent No. 5,962,897) in view of Yamazaki et al. (Yamazaki '892) (JP 11-44892). This rejection is respectfully traversed.

It is noted that Yamazaki et al. (Yamazaki '648) (U.S. Patent No. 6,617,648) is a U.S. counterpart of Yamazaki '892, and it is respectfully requested that the Examiner cite Yamazaki '648 in the next Office Action.

The Examiner has relied on the Japanese references Teramoto and Yamazaki '892 in the rejection. However, it is submitted that the better approach would for the Examiner to rely on the U.S. counterpart references Takemura and Yamazaki '648 to simplify matters should the rejection be appealed to the Board of Patent Appeals and Interferences.

In explaining the rejection, the Examiner has relied on FIGS. 1A-1D and 2A-2D of Japanese reference Teramoto, which respectively correspond to FIGS. 5A-5C and 6A-6D of U.S. counterpart reference Takemura. Also, the Examiner has relied on FIGS. 6A-6D of Japanese reference Yamazaki '892, which respectively correspond to FIGS. 6A-6D of U.S. counterpart reference Yamazaki '648.

However, it is submitted that the combination of Teramoto and Yamazaki '892 proposed by the Examiner does not disclose or suggest "spacers formed over said first insulating layer and on both sidewall portions of said gate electrode and said capping layer" as recited in independent claim 12, or "spacers formed over said first insulating layer and on side wall portions of said gate electrode and said capping layer" as recited in independent claim 22, because the spacers 22 in FIGS. 1C, 1D, 2C, and 2D of Teramoto are formed only on sidewall portions of the capping layer 16 and are not formed on sidewall portions of the gate electrode

15. Also, the spacers 608 in FIGS. 6C-6E of Yamazaki '892 are formed only on sidewall portions of the capping layer 605, and are not formed on the sidewall portions of the gate electrode 604.

Furthermore, it is submitted that the combination of Teramoto and Yamazaki '892 proposed by the Examiner does not disclose or suggest the feature "wherein the source and drain electrodes do not contact the spacers" recited in dependent claims 31 and 34 because the source and drain electrodes 29 and 30 in FIGS. 1D and 2D of Teramoto contact the spacers 22. Although the Examiner states that "[r]egarding claim 31/34, Yamazaki '892 discloses source and drain electrodes (614, 615) that do not contact a capping layer 605; and wherein the source and drain electrodes do not contact the spacers 608," the source and drain electrodes 614 and 615 in FIG. 6E of Yamazaki '892 do not contact the source and drain regions without contact holes as recited in claims 12 and 22 from which claims 31 and 34 depend.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 12, 22, and 29-34 (i.e., claims 12, 22, 31, and 34 discussed above and claims 29, 30, 32, and 33 depending from claims 12 and 22) under 35 USC 103(a) as being unpatentable over Teramoto in view of Yamazaki '892 be withdrawn.

Patentability of New Claims 35-38

It is submitted that new dependent claims 35 and 37 are patentable over Yamazaki '190, Zhang, Yamazaki '288, Yamazaki '502, Teramoto, Takemura, Yamazaki '892, and Yamazaki '648 discussed above because these references, taken singly or in any combination, do not disclose or suggest the following combination of features recited in claims 35 and 37:

wherein:

the source and drain electrodes do not contact the high-density source and drain regions via any electrode material filling any contact holes;

the source and drain electrodes do not contact the capping layer; and

the source and drain electrodes do not contact the spacers.

The feature "wherein: the source and drain electrodes do not contact the high-density source and drain regions via any electrode material filling any contact holes" recited in claims 35 and 37 is also recited in claims 29 and 32, and the Examiner considers the source and drain

electrodes 29 and 30 in FIGS. 1D and 2D of Teramoto provide this feature. The features "wherein: . . . the source and drain electrodes do not contact the capping layer; and the source and drain electrodes do not contact the spacers" recited in claims 35 and 37 are also recited in claims 31 and 34, and the Examiner considers the source and drain electrodes in FIG. 6E of Yamazaki '892 to provide this feature. However, assuming *arguendo* that the Examiner's is correct, it is submitted that there would have been no reason for one of ordinary skill in the art to combine the source and drain electrodes 29 and 30 in FIGS. 1D and 2D of Teramoto and the source and drain electrodes in FIG. 6E of Yamazaki '892 so as to somehow provide the combination of features recited in claims 35 and 37.

For at least the foregoing reasons, it is submitted that claims 35-38 (i.e., claims 35 and 37 discussed above and claims 36 and 38 depending from claims 35 and 37) are patentable over Yamazaki '190, Zhang, Yamazaki '288, Yamazaki '502, Teramoto, Takemura, Yamazaki '892, and Yamazaki '648, and it is respectfully requested that claims 35-38 be allowed.

Conclusion

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

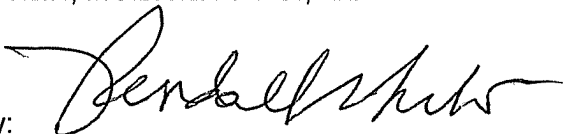
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with the filing of this paper, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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Date: 10/31/07

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